37TH ARGOS OPERATIONS COMMITTEE MEETING

Auberge Cavalière, les Saintes-Maries-de-la-Mer, France

June 11-13, 2003

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A. Opening

A-1. Welcoming Remarks

Claude Gal, French co-chair, opened the 37th Argos Operations Committee meeting and welcomed participants. He wished all the participants a successful meeting. He extended a special welcome to Mr Ishido from NASDA who was participating for the first time as the Japanese co-chair. The list of attendees is given as exhibit #1.

A-2. Adoption of the Agenda

The agenda was adopted as written. The meeting agenda is given as exhibit # 2.

A-3. Selection of the Writing Group

All participants were invited to provide a summary of their presentation for the meeting report.

B. Status of Service Argos

Michel Cazenave, Chairman of CLS Service Argos, announced his retirement to be effective before the next O/C meeting.

C. Review of past actions items

32-13-C/S
Draft and approve a new Project Mission and Operations Implementation Plan (PMOIP) for the Argos DCS planned to fly on NOAA N, N', ADEOS II and METOP.
Action: R. Bassett, L. Mesnier and C. Gal
Closed
NOAA/CNES meeting (April 2003) discussed progress on the rough draft. CNES provided copy of ADEOS II PMOIP for review as a template.
See action item37-19-C/S

35-8-C/S
CNES/CLS and NOAA will investigate and compile user and system requirements for the NPOESS era. A meeting will be set up to discuss user and system requirements for the NPOESS era.
Action: M. Hucteau, C. Gal, E. Bruchon and R. Bassett by December 2001.
Closed.
NOAA/CNES meeting (April 2003) discussed progress on gathering of future user requirements. Requirements needed to begin development (2006) of NPOESS C-3 satellite (2009 delivery) which will be the first satellite with an evolved instrument. CLS presented a report on "Future Requirements for Argos Evolution" at OPSCOM 37.

35-9-S
NOAA will coordinate wildlife applications requirements within NOAA.
Action: D. Benner, S. Auer, B. Woodward and R. Bassett.
Closed.
NOAA/CNES meeting (April 2003) decided not to conduct formal survey in light of information gathered at a recent Argos Animal Tracking Symposium (AATS).
Informal liaison with the user community will continue.

35-22-C/S
NOAA/IPO designated to lead the drafting of the NPOESS Project Plan (Space Segment) for DCS with the collaboration of CNES and the other prospective participating agencies, i.e. NASDA and EUMETSAT.
Action: C. Gal, R. Bassett and M. Cummings by 2004.
Ongoing.
NPOESS Project Plan discussed at CNES/NOAA meeting in January 2003. CNES provided NOAA/IPO with a draft for review.

36-1-C
CNES/CLS to investigate and report to NOAA/NASA the utility of Argos data from NOAA-11, NOAA-12, and NOAA-14 following the launch of NOAA-M.
Action: M. Cazenave by September 2002.
Closed.
Report provided and utilized to adjust POES constellation in accordance with operational requirements.

36-2-C/N
CNES to provide NASA with the correct information for the Argos instrument onboard NOAA-M and NASA to update associated handbook.
Action: C. Gal and J. Mentall by December 2003.
Ongoing
NOAA-M handbook published. NASA will identify POC for submission of NOAA-N information. CNES encouraged to submit correct information to NASA and NOAA.

36-3-C/S
CNES/CLS and NOAA to develop a checklist for future launches to delineate required actions, such as handbook updates, constellation configuration changes, etc.
Action: A. Goasguen, C. Gal and R. Bassett by December 2003.
Ongoing
NOAA-N scheduled launch in June 2004. Checklist should be completed by December 2003.

36-4-C/S
CNES and NOAA to draft a Letter of Intent from the OPSCOM to the NOAA/IPO to clarify, provide and coordinate the A-DCS requirements for the NPOESS constellation.
Action: M. Hucteau and E. Bruchon by September 2002.
Closed.
NOAA letter dated January 15, 2003 confirmed NOAA's intent to continue Argos continuity into the NPOESS era.

36-5-C/I
CNES and INPE will develop and implement an agreement based upon the terms of the CNES letter to INPE for formalizing the present data sharing experiment and making it permanent.
Action: M. Hucteau and W. Yamaguti by December 2003.
Ongoing.
CLS receiving Argos data from INPE on an operational basis.

36-6-C/I
CNES and INPE will explore how data sharing can be expanded into a larger cooperative framework, building upon the ongoing CNES/INPE cooperative efforts. Specific proposals for new cooperative activities between the Brazilian and Argos DCS and for further integration of the two systems will be presented at the next Operations Committee meeting.
Action: M. Hucteau, C. Gal, and W. Yamaguti by June 2004.
Ongoing.

36-7-C
CNES to investigate about the impact of the METOP SAR/A-DCS receiving antenna situation on A-DCS performance.
Action: C. Gal end of June 2003
Ongoing.

36-8-C/S
CNES/CLS and NOAA to coordinate dates for OPSCOM 37 in France with all participants.
Action: M. Cazenave, C. Gal and D. Benner by December 2002.
Closed.

36-9-C/S
CLS will add an estimated expiration date based upon the associated System Use Agreement to the Program Review notification letter sent back to the user by CLS.
Action: L. Mesnier by October 2002.
Closed.
CLS presented proposed wording of program review notification at OPSCOM 37.

36-10-C/S
SUA renewal notification letters to be revised to include a timetable for the renewal of expiring SUAs and the potential for the suspension of data processing and distribution services as well as the recycling of user identification numbers. CNES/CLS and NOAA to immediately implement use of the letters upon completion and approval by OC co-chairs.
Action: L. Mesnier, R. Bassett by August 2002.
Closed
SUA renewal letters were presented and approved at OPSCOM 37.

36-11-C/S
Draft MOU to govern cooperation on the NPOESS series of satellites to be circulated for review by CNES, NOAA, and NOAA IPO, recognizing the timelines discussed at the March, 2002 meeting among NOAA/IPO and CNES, and in the CNES report for E-3-1 at 36th O/C.
Action: E. Bruchon by December 2003
Ongoing.
Draft MOU undergoing internal NOAA review.

36-12-C/J
NASDA/CNES to coordinate the drafting and distribution of the ADEOS II-Argos DCS data release plan.
Action: C. Ishida and C. Gal by September 2002.
Closed.
ADEOS II-Argos DCS data distribution began April 2003.

36-13-C/S
Update Consolidated Report to reflect structure and content discussed at 37th OC meeting.
Action: R. Bassett, L. Mesnier, E. Bruchon, M. Hucteau and C. Gal by June 2004.
Ongoing.
Content and Plan of Action was discussed at OPSCOM 37. A renewed effort to document Argos policies and procedures to augment existing MOUs and project plans.

36-14-C
CLS will propose a procedure to assign frequencies for Argos applications.
Action: C. Vassal, B. Woodward, C. Gal by June 2004.
Ongoing.
CLS presented a proposal at OPSCOM 37 for approval. However implementation was deemed unfeasible at this time.

36-15-C/S/J/E
Joint task team to investigate feasibility of reporting system performance via three metrics: timeliness (delay in delivering data sets to users), quantity (number of data sets delivered) and quality (bit error rate).
Action: M. Cazenave, R. Bassett, B. Woodward, Y. Ishido and G. Mason by June 2003.
Closed.
Performance metrics for the NOAA POES DCS was discussed at OPSCOM 37. It was recommended the specific system metrics for other Argos data processing systems (i.e. ADEOS II, METOP) be defined in their performance reports.

36-16-C/S
CLS to work with NOAA to provide system use statistics on four categories: national security/homeland defense, humanitarian operations, law enforcement and episodic.
Action: L. Mesnier and D. Benner by September 2002.
Closed.
Statistics required to monitor non-environmental use of the system for regulatory compliance.
See new action item 37-10-C

36-17-S
NOAA to provide letter informing CNES of winning NPOESS contractor and contacts/procedures to resume planning discussions.
Action: E. Bruchon by October, 2002
Closed.
NOAA/IPO letter dated September 27, 2002 sent to CNES (C. Gal).

36-18-C
CNES/CLS to conduct and report on a cost and performance evaluation for the implementation of a dedicated, stand-alone Brazilian DCS station.
Action: C. Vassal by December, 2002
Closed.
Implementation feasible, however, any installation will be in accordance with user requirements and should optimize INPE satellite plans.

D. Review of spacecraft system performance

D-1. Status of Spacecraft: NOAA-11 to NOAA-17 (see exhibit # 3)

To be submitted by Mickey Fitzmaurice.

D-2. Status of the ADEOS II spacecraft (see exhibit # 4)

Yasushi Kojima from NASDA ADEOS-II project presented the status of the ADEOS-II spacecraft as per exhibit 4.
Overall conclusion is that the ADEOS-II and DCS check out results are good and that the routine operation is working well since April 14, date of a NASDA internal review.

D-3. Status of Argos instruments on NOAA and ADEOS II (see exhibit # 5)

Claude Gal from CNES presented the status of the in-orbit Argos instruments as per exhibit D3. Main change since the last operations committee in 2002 is the successful launch and activation of the NASDA/CNES instrument installed on the ADEOS-II satellite. The on orbit check out is now completed and the instrument in operational use since May 2003.

E. Future systems

E-1. Spacecraft

E-1-1. NOAA-N, N' (see exhibit # 6)

James Mentall from NASA reported that the tentative reorganization combining the POES and GOES Programes that was presented during the 2002 OPSCOM has been implemented. There have been no changes in organization or personel that affect ARGOS. The organization of POES when the last satellite is placed in storage at the end of 2004 has not yet been determined.

Thermal-Vacuum testing has been completed on NOAA N-prime. This spacecraft is going into temporary storage until after the launch of NOAA-N. Launch of NOAA-N is planned for late June 2004 but several significant technical problems need to be solved first. After the launch testing will resume with work being completed by the end of 2004.

NASA reported that the A-DCS was successfully integrated onto the NOAA N-prime spacecraft. Unfortunately during satellite thermal-vacuum testing a significant number of test messages were not correctly processed. Some "failures" were just a mater of definition but others were real failures of the A-DCS processing messages. The most significant anomaly was that 6 times the times the instrument stopped processing messages entirely and a "restart" command had to be sent. After N-prime goes into storage A-DCS will be sent back to CNES for trouble shooting.

E-1-2. NPOESS spacecraft (see exhibit # 7)

Chris O'Connors provided an NPOESS overview of the infrastructure and handling of DCS data. A discussion on the status of safety net was raised by Bill Woodward. Bill inquired what progress Northrop Grumman has made in making Safety Net a reality. It was reported that the contractor is required to build this infrastructure by contract, but what the current state of the network is today is unknown. Also of note, the slide containing the payload for the three NPOESS satellites and the METOP satellite contains an error in the placement of the CRIS instrument. The payload slide should be consulted for DCS information only as the NPOESS system continues to evolve. Two action items were announced during the NPOESS spacecraft overview brief and are as follows.

E-1-3. METOP (see exhibit # 8)

Marc Cohen from EUMETSAT presented the overall status of the EPS Programme and of the associated Metop Space Segment. The launch of the first satellite (Metop 2) is confirmed to be in 2005. The IASI instrument is nearing completion of its environmental testing and subsequent delivery to Metop (planned in July 2003). All Argos related space hardware have been delivered by CNES to Metop. The first 2 flight models were successfully integrated on the Metop 1 and 2 satellites. The last model is being integrated on the Metop 3 satellite. It was pointed out that the current anomalies detected on the NOAA N´ satellite regarding the A-DCS instrument may have some relevance to Metop although similar problems have not been found out on Metop. Close cooperation between CNES and EUMETSAT was confirmed about this topic.

E-2. Argos instruments (E-2.1, 2.2 and 2.3) (see exhibit # 9)

E-2-1. Argos DCS/NOAA-N

E-2-2. Argos DCS/METOP

E-2-3. Argos DCS/NOAA-N'

Claude Gal from CNES presented the status of the future Argos instruments as per exhibits E2.
There is still one Argos-2 instrument to be launched on NOAA-N in 2004.
After that five Argos-3 (Advanced DCS) instruments will be launched on METOP 1, 2, 3, NOAA.N' and NPOESS C2 (TBC). The first of these launches will be METOP in 2005.

E-2-4. NPOESS SARSAT/ARGOS (see exhibit # 10)

Chris O'Connors presented a summary of a two day meeting held in the end of January that focused on coordination between NOAA, NASA, IPO, CNES, and NOAA /NESDIS/IA. The first day's agenda addressed issues with the SARSAT program and the SARP instrument planned for the NPOESS era of satellites. Day two of the meeting centered on ADCS instrument for the Argos program on NPOESS. A draft meeting report for the second day of the meeting is available with detailed information on discussions and participants at NOAA/DSD. The main topics of discussion were HRD/LRD requirements to carry Argos data, proposing to place an existing Argos instrument on the 2130 NPOESS orbit currently not scheduled to carry Argos, and MOU creation and timeline for approval. It was reported that the request for DCS data on LRD data stream and the possibility of a DCS instrument on the 2130 orbit of NPOESS were no longer in consideration. The MOU will be updated under OPSCOM item H-1. Action items 1-4 from the meeting where close after the withdrawal of the LARD and 2130 requests. Action 5 was closed after IPO and NASA settle an antenna pattern discrepancy. Action item 6 remains open from the January meeting. The action requests IPO to investigate liability of handling the CNES DCS instrument while in the U.S.

No OPSCOM action items were identified.

E-3. Progress report on future DCS requirements (see exhibit # 11)

Rob Bassett reported on NOAA efforts to collect user requirements for future DCS missions. He highlighted several recent presentations to various user communities that indicated a need for more accurate Doppler locations and the capability to transmit large (Mb) data sets. While efforts continue to solicit user requirements, many of the inputs are qualitative vice quantitative which makes a technical statement of need quite difficult. He proposed and the OPSCOM concurred to close action items 35-8-C/S and 35-9-S.

Christophe Vassal presented the preliminary results of a study performed during the period June 2002 to June 2003 to collect and analyze users' requirements. These requirements will be used as a framework to define functional specifications for the next Argos generation to be flown on NPOESS and GCOM B satellites. It has to be noted that it is not an easy task to ask Argos users about their requirements for the future when the third generation of the system is not even flying. However out of 5 categories of Argos users, namely oceanographers, biologists, fisheries specialists, government agencies and humanitarian organisations, we can define two categories of users' requirements:

- users' requirements relative to transmitters where users would like inexpensive transmitters, lighter, less power drain demanding, and with frequency synthetizers for better doppler positioning.
- users' requirements relative to system performances where users would like reduced latency times principally at the equator, reduced throughput times, more capacity to accommodate the regular growth of active transmitters that we have been experiencing since 10 years and to accommodate high data rate applications.

Also the operator of the system, CNES/CLS anticipates certain technology driven evolution like the capability to download new software modifications and/or evolutions directly into the onboard instrument through the satellite processor, the capability to perform DRUs maintenance operations

from the ground and the capability to change the frequency of a given transmitter or of a group of transmitters from the satellite using the downlink.

It expected that those preliminary results will be followed by more precise analysis when phase A studies for the next Argos generation will have been decided.

E-4. Brazilian DCS report (see exhibit # 12)

CNES and CLS did a very preliminary study which demonstrates that the integration of a stand alone Brazilian station is feasible. The antenna sub-system is available off-the –shelf from manufacturer involved in the Jason program. The processor (procod) is upgraded presently by a Brazilian manufacturer and should be ready by the middle of 2005. Any decision to finalize a cost analysis and to present it to OPSCOM/JTA is dependant upon two factors:

- A strong users'requirement for enhanced latency time in any equatorial region of the world
- The confirmation from INPE that their actual constellation is going to be replaced within the expected timeframe.

Wilson Yamaguti presented the Brazilian Data Collection System. Its continuity is assured by the following plan for the space segment:

- The Launch of the CBERS-2 satellite by Sep. 2003.
- The discussion of two additional scientific satellites (FBM, EQUARS) to carry on a DCS transponder. The FBM is a 6 degrees inclination and 750 km altitude orbit to be launched by 2005/2006. The EQUARS is a 20 degrees inclination and 750 km altitude orbit to be launched by 2006.
- The addition of two new small satellites (SCD-3, SCD-4) in the 2004-2007 National Space Activities Program to replace the SCD-1 and SCD-2 satellites by 2006 and 2008.
- The approval of the China and Brazil cooperative program to build and to launch the CBERS-3 and CBERS-4 by 2008 and 2010.
- A possible cooperative program between Argentina and Brazil to build and to launch the SSR-1 by 2007.
- The launch of the SSR-2 with a Synthetic Aperture Radar and a DCS transponder by 2010.

Related to the data exchange between CNES and INPE the status is the following:

- CNES/CLS is receiving raw data transmitted from INPE.
- INPE is doing the technical evaluation of data transmitted from CLS and is analyzing ways to formalize the data exchange.

F. Review of ground processing systems

F-1. NESDIS Processing system (see exhibit # 13)

Chris O'Connors NOAA/DSD provided the Information Processing Division (IPD) of NESDIS POES statistics on the data delivery to CLS and SAI. 99.2% percent of global stored data (DCSX) was delivered from NOAA 16 and 99.5% from NOAA 15 and 17 to CLS/SAI over the course of January 2002 to March 2003. In addition 18432 regional datasets were delivered of real-time DCSH/HRPT data from NOAA 14, 15, 16, and 17 from three ground station, Monterey, Fairbanks,

and Wallops Island. Statistics were also provided to show the percentage of data deliver to CLS and SAI within 2 hours. The 2 hours is an IPD metrics for data delivery of DCS and is calculated from the time of a completed orbit (recorder stop time) to the time of delivery to CLS or SAI. In both graphs NOAA 15 and 17 percentages are equal to or less then the percentages for NOAA 16. The lower percentages of data delivered within 2 hours by NOAA 15 and 17 are caused by conflicts in the downlink of POES data. The Satellite Operations Command Center (SOCC) will downlink NOAA 16 data before NOAA 17 data thus causing the delivery differences to occur.

F-2. CNES Processing system

F-2-1. Operations report (see exhibits # 14)

Bill Woodward reviewed the Argos system operations for year 2002 in the categories of Ground Stations, Processing Centers, Communications Links and data Throughput Times. He reported that Fairbanks and Wallops continue to be the ground stations receiving the STIP telemetry from NOAA- 11, 12, 14, 15, 16, & 17 and that the Lannion station is still not in service to receive STIP data. Five new regional stations were brought on line in 2002 (Oslo, Hatoyama, Singapore, Las Palmas, Santiago) bringing the total number of regional stations to 33. The Argos constellation now includes 7 satellites with the basic Argos service being provided by NOAA-15 and 16 as well as ADEOS II.

During 2002 the 2 Global Processing Centers (Toulouse and Largo) and the 3 Regional Processing Centers (Lima, Tokyo, Melbourne) operated without a hitch. The Toulouse Center now has double Internet access which improves the performance and reliability of the communication links. Data throughput times for 2002 were approximately the same as for the previous year. For NOAA 15, 16, 17, 64% of the stored data arrived within 3 hours. 86% of the real-time data from all the satellites arrives within 30 mins.

F-2-2. Argos Next ground segment (see exhibits # 15).

Elements of the Argos Next ground segment were reviewed including the Processing Centers, the DMMC, the Master Beacons and the Platform Messaging Transceiver (PMT). All of the necessary modifications to the Processing Centers were made and successfully tested during the ADEOS II on-orbit test phase. The DMMC was installed in Toulouse in late 2002 (to be installed in Largo in mid-2004). Testing of the DMMC is nearly complete and and it will be available to Beta testers in the 3Q of 2003 and to everyone else soon thereafter.

Three Master Beacons have been installed (Hatoyama, Toulouse and Fairbanks). Installation of a fourth beacon is pending. The Fairbanks beacon is currently not operating and a repair visit is scheduled for late June. The PMT development is nearly complete. Two prototypes will be delivered by early summer and 50 units are scheduled to be available in early September for initial applications of the Argos 2-way.

F-2-3. System use (see exhibit # 16)

Louis Mesnier of CLS reported that the number of “operational” platforms, i.e. transmitting once daily and averaged over one month, increased by 8.7% over the past year. It was noted that 5393 operational platforms reported in April 2002 compared with 4962 platforms in April 2001. During

the same period, the number of "active" platforms, i.e. transmitting at least once in a month, exceeded 9000 to reach 10,000 during May 2003. The 1,700 platforms used in fishing Vessel Monitoring Systems (VMS) represent the largest number of "operational" platforms used in any one application. The second largest number of operating platforms with more than 1,500 platforms are reported to being used on drifting oceanographic buoys. It was reported that nearly 750 of this drifting buoys report on GTS and that the totals include the subsurface drifters. The percentage of Drifting buoys transmitting onto the GTS was confirmed to have reached again the level of 2001, i.e. 57%. The number of wildlife and fishing platforms in the system continue to grow faster than other types.

It was noted that the global system occupation rate (or duty coefficient) continues to increase with usage estimated at approximately 12% of the Argos 2 instrument capacity in May 2003. System use reaches a maximum at more than 50% in South America due to Argos VMS activity in Peru and Brazil. It is estimated to be around 45% in Europe and North America. It was reported that more than 16,000 individual (different ID numbered) transmitters were received and processed in the past year by the Argos processing centers. More details on the types of platforms operating in the system were given and are available in exhibit # 16.

F-2-4. System improvement (see exhibit # 17)

Argos System Improvements for 2002 included upgrades to the hardware and software configurations, the ground segment architecture and the regional processing centers. A fourth Argos operational computer was added to improve the performance of the Oracle database service, and a second internet access at 2 Mbits/sec was added to enhance the bandwidth and reliability of the communication links. In addition, the capability for total redundancy between Toulouse and Largo was successfully achieved in 2002 and 5 new HRPT stations were added to the regional network bringing the total number to 33.

Phase I of the Argos 2001 project was completed and opened to users in May 2003, and Phase II, improvements in added-value services, began in December 2002 with a target completion date of December 2003. A new project called SSA3 was started which will address all changes needed in the current ground segment for Argos 3. The main improvements at the regional processing centers involved upgrading versions of their software.

F-3. NASDA processing system (see exhibit # 18)

Yoshio Ishido from NASDA EOC presented the status of the ADEOS-II ground system status as per exhibit 18.
He explained the mission operations scenario: 24 hours and 7 days with global data acquisition and Argos/DCS level delivery in Near Real time for both global and regional data.

Dosho Hirohiko from NASDA EOC presented the ADEOS-II initial operations and evaluation results as per exhibit 18.
In conclusion, NASDA confirmed that the requirements were met and that the EOC interface for the Argos DCS system could start the routine operations.

F-4. METOP DCS ground segment (see exhibit # 19)

The status of the EPS Ground segment was presented leading to a phased delivery of the EPS CGS from May 2004 onwards. The Polar Site site (Svalbard) is now available and all antennas are installed with a planned acceptance in Summer 2003. This site has the advantage of having no blind orbits. EUMETSAT confimed that it will exercise the option for the installation of the Master Beacon in Svalbard. The likely installation period will be in the summer 2004.

G. Programs, Admissions and Promotions

G-1. Programs

G-1-1. Report on JTA Meeting (see exhibit # 20)

Derek Painting informed the OPSCOM of the main results of the twenty-second meeting on the Argos Joint Tariff Agreement (La Martinique, 21 – 23 October, 2002).
It was noted that the 5-year plan (2000 – 2004), that provided a systematic framework for JTA cost and tariff evolutions was operating successfully and should result in elimination of accumulated losses by 2005. Beyond 2004, the tariff structure needs to be re-negotiated to reflect the changes in user community and operational cost basis and also to simplify the rules and conditions of use, since these have become increasingly complicated over the years.

The OPSCOM concurred with the need to re-address the basis of tariff determination, especially to return to the original principles of cost and benefit sharing amongst all JTA participants. It therefore requested the JTA chairman and CLS to bring this issue to the next meeting of the JTA with the objective of developing a framework for future tariff evolution, based on readily understood cost/benefit principles. This plan, in draft form, should be presented at the next OPSCOM meeting for approval in principle and further refined for implementation in 2005 following the twenty-fourth meeting of the JTA in autumn 2004.

On the question of re-activating the Lannion global ground station to address the “blind orbit” issue, the meeting was informed that a program to enhance the Barrow ground station was in progress. This approach would not entirely restore the service provided by Lannion but was being undertaken in the light of current operational and technical considerations.
Derek Painting presented to the meeting a graph which was already presented at the last DBCP meeting and shows clearly the relative effect of Lannion and Barrow ground stations on the blind orbits.
It was noted, however, that the new generation of satellites carry digital data recorders that might facilitate downloading of stored data to Lannion (in its current configuration) at little effect. Also it was noted that the METOP ground segment would eliminate NOAA/POES blind orbits.

G-1-2. Status of U.S. processing agreement (see exhibit # 21)

This describes the U.S. portion of the Argos Joint Tariff Agreement (JTA). In 2002, the U.S. used 1402.8 Platform Years (Ptt/yr) and 41,305 Active Platform Months. For 2003, the U.S. has agreed to purchase 790.0 Ptt/yr and expects to use 1500 Ptt/yr and 43,400 Active Platform Months.

G-1-3. Status of current agreements (see exhibit # 22)

Louis Mesnier of CLS presented the list of current system use agreements (SUAs) which is replacing the former list of current programs. Apart from the usual fields, information given included status (approved, expired, renewed), type (initial or renewal), initial deployment and expiration dates and user requirements. It was noted that the number of current agreements was 1029 over the past year from June 2002 to June 2003. Since the last OC meeting, 395 programs had their SUA approved of which 240 were renewals and approximately 150 were "a priori" approved. Concerning current programs, wildlife tracking represents 47% of the overall total with 486 agreements. Oceanography is the second most dominant application with 349 programs or 34% of the total. In terms of number of platforms per agreements (i.e. the number of ID numbers allocated to programs) Oceanography still represents the most important application with 12,000 distributed ID numbers. This number represents nearly 31% of the total platforms reporting. The breakdown of current agreements by recognized categories (i.e. Environment/Non Environment, Governmental/Non-profit/Non-governmental) did not change significantly since the last OC meeting. The environmental programs represent more than 95% of the total number of agreements.

G-1-4. Status of non-environmental activity (see exhibit # 23)

Louis Mesnier of CLS reported that non-environmental use of the Argos system continues to be regularly monitored. For the first quarter of 2003, the percentage of non-environmental activity was 4.64%, which represents 235 active platforms on average compared with 187 for the same period of 2002. Over one year, the percentage was 4.76% which is similar to last year. It was noted that system usage for non-environmental applications did exceed 5% in the 3rd quarter of 2002 but subsequently declined in the 4th Q of 2002 due to a decrease in the episodic use of the system. Last year, it was mentioned that the anti-piracy program of the International Maritime Bureau was increasing at a greater rate than the overall non-environmental activity in the system. Anti-piracy is now the largest non-environmental application. It represents more than 2.6% of the total activity in the system. In comparison, law enforcement programs represent approximately 1.1% and programs with potential risk of loss of life (which are very seasonal) vary between 0.5% and more than 2% of the total activity in the system.

The meeting decided to adopt a more detailed breakdown concerning the sensitive use and to identify more specifically national defense, homeland security, law enforcement and humanitarian operations. Episodic use will continue to be included in the non-environmental activity report. Refer to action item 37-10-C.

G-1-5. Financial status of Agent (see exhibit # 24)

Christophe Vassal of CLS reviewed the Argos financial status. The previous proposal confirmed during the OC 35 to separate the JTA operating cost obligations from the total operating cost was adopted at the JTA-21 meeting and reiterated at the JTA-22 meeting. The 2002 annual Argos basic costs, for the purpose of calculating the JTA share, is capped at the actual 2000 figure (M€ 9.49) to be then increased by the annual inflation rates for 2001 and 2002 successively. The percentage of JTA active PTTs versus the total number of active PTTs is also capped at 55% according to FY plan.

Globally during year 2002, the incomes of the agent increased by 5.5% mainly through JTA use increase. It is also noted that the 2002 JTA contemplates an excess of 0.5 M€ and the JTA cumulated loss is now 1.02M€. The five year plan (see exhibit # 24) may now contemplate a full reimbursement at the end of the plan which is 2004. Reimbursement of non-JTA losses totals in 2002 was 0.41 M€ while the remaining Global Non-JTA loss is calculated to be 9.71 M€ at the end of 2002.

G-2. Promotion activity report (see exhibit # 25)

Louis Mesnier of CLS reported on promotional activity undertaken by CLS/SAI since the last OC meeting. This activity included participation in conferences or exhibitions associated with the use of the system for scientific applications (i.e. oceanography and wildlife), in the protection of the environment and management of natural resources (hazmat transportation, fishing monitoring). It was also noted that CLS/SAI participated in conferences concerning maritime safety and humanitarian operations.

Service Argos Inc. organized the Argos Animal Tracking Symposium in March 2003 which was a real success and gave the opportunity to communicate with wildlife users on the best ways to get the best performances from the system.

G-3. System Use administration (see exhibit # 26)

Chris O'Connors NOAA/DSD reported on the NOAA Argos SUA administration. An action (37-11-S/C) was taken on Vessel Monitoring Systems usage to contact the Chilean Government.

Fulfilling action item 36-10-C/S, Chris O'Connors NOAA/DSD submitted three draft user letters for approval by the OPSCOM. The user letters serve as notification from CLS/SAI to the users of their requirement to renew their SUA, 30 days prior to renewal, on the renewal date and 30 days after renewal date. The letters were accepted by the co-chairs.

An e-mail address was secured for NOAA to allow SUAs to be transfer to the future system (argosua@noaa.gov).

With the pending regulation changes opening the Argos system up to more sensitive use users it's an appropriate time to coordinate what information should be included and how users should be grouped in the SUA process. NOAA reported the categories to separate users into for sensitive as law enforcement, homeland security, national defense, and humanitarian.

G-4. Argos SUA implementation (see exhibit # 27)

Rob Bassett of NOAA presented the following topics for discussion.
a) He stated that modifications to the SUA approved by OC 35 (SUA "electronic" format and modification of "treatment of data" policy) have been implemented.
b) Additional SUA modifications, however, will be necessary to: respond to a JTA request for clarification of the financial liability of the user, to reflect recent SU policy changes i.e. Sensitive Use, and to reflect the addition of the Japan Aerospace Exploration Agency (JAXA) as an Argos Participating Agency.

Action item 37-12-S was opened for CNES/CLS and NOAA to revise current SUA form to reflect these additional modifications and submit it to the Participating Agencies for approval.

He reported that Action item 36-9-C/S, to add a SUA expiration date to the program review notification letter was completed and has been implemented.

G-5. Argos II frequency policy update (see exhibit # 28)

Louis Mesnier of CLS reviewed the five year evolution of the use of the Argos-1 and Argos-2 bandwidth. It was noted that still over 35% of active platforms are clustered in the central part of the Argos 1 frequency band (401,650 Khz +/- 2 Khz). CLS/SAI continued promotional activities to educate users and ask manufacturers to voluntarily utilize all of the available bandwidth. The OPSCOM recognized the need to more encourage ARGOS beacon manufacturers to utilize the entire Argos frequency band since now four Argos 2 instruments are now in flight.

Nevertheless, it seems that the assignment of frequency channels is not optimal to better use the Argos 2 band and the meeting decided not to take any coercitive decision as long as the situation continues to improve. A recommendation should be added to the program review letters sent to users to allocate username and password, together with the list of ID numbers. (action item 37-20-C).

H. Status of agreements

H-1. MOU's status

Claude Gal of CNES reported all MOUs are signed for the current Argos System, therefore no report is required. Tabled until OPSCOM 38.

H-2. OPSCOM working procedures (see exhibit # 29)

Rob Bassett of NOAA reported on the TOR for the Argos system outlining its contents and provided a copy for the minutes. He highlighted that the current TOR were adopted at OPSCOM 31 in June 1997 and included proposed modifications for expanded OPSCOM participation. The OPSCOM co-chairs expressed a major concern that procedures for SUA approval be documented and disseminated that reflect NASDA role as a Participating Agency. Four Action Items were taken. A.I. 37-14-S: NOAA to document the structure and procedures of its electronic SUA review system and provide to the OPSCOM attendees.
A. I. 37-15-C: CNES/CLS to document the procedures for the interim SUA review process to reflect the addition of NASDA as a Participating Agency and distribute to all OPSCOM attendees.
A. I. 37-16-C: CNES/CLS to document access procedures to their SUA database and provide to NASDA.
A. I. 37-17-S/C/N: NOAA to revise TOR to reflect changes in Argos OPSCOM membership and the implementation of streamlined SUA approval procedures.

H-3. Consolidated Report update (see exhibit # 30)

Rob Bassett of NOAA provided a history and update on the status of the Consolidated Report (CR). He stated that the contract support will be established to assist in finalizing the document and tap the "corporate knowledge" of the OC members. Action item 32-9-C/S was closed and a new action item 36-13-C/S was opened to reflect these efforts for presentation at the 37 OC meeting.

Action: NOAA/CLS to Revise the terms of reference to update the membership of JEXE

H-4. Argos Project Plans status (see exhibit # 31)

Rob Bassett of NOAA provided an update on the status of the NOAA/CNES Project Mission and Operations Implementation Plan (PMOIP) and established a completion date of June 2003 to support the launch of NOAA N'.

H-5. Argos NPOESS Agreement (see exhibit # 32)

Emilie Bruchon from NOAA presented the status of the NPOESS MOU. A draft agreed to by key NOAA program offices (Satellite Data Processing and Distribution; Integrated Program Office) is currently under review by NOAA General Counsel. Following legal review, the revised draft will be reviewed again by key program offices and by other interested offices within NOAA/Department of Commerce. The NOAA-agreed draft will then be sent to the U.S. Department of State for authorization to negotiate. When that authorization is granted, NOAA will then be able to provide CNES with a draft and discuss specifics of the text. NOAA is required to send the negotiated text back to the State Department for authorization to sign. It is anticipated that this process will be completed by the end of 2003.

I. Review and approve draft minutes

J. Establish date and location of next meeting

The proposed location for O/C 38 will be in the USA during June 2004. Proposal for dates and location to be precised.

NEW ACTIONS

37-1-S
NOAA to submit and coordinate Argos data requirements for NOAA blind orbits
Action: R. Bassett and C. O'Connors by January 2004.

37-2-C
CNES/CLS to provide NOAA with a prioritized list for satellite downloads from NOAA 11, 12, 14, and 15 to supplement NOAA 16 and 17 (no blind orbits) for coordination of the POES constellation
Action: L. Mesnier, B.Woodward by July 2003

37-3-C
CNES to provide NOAA with a technical memorandum outlining the requirements for integration of the A-DCS on NPOESS in preparation of an interface meeting to be held in September 2003.
Action: C. Gal by end of July 2003.

37-4-S
NOAA to arrange NPOESS coordination meeting and agenda with the IPO.
Action: R. Bassett and C. O'Connors by July 2003.

37-5-C
CNES/CLS to assess the areas of the world where real time data requirements and thus regional HRPT station coverage are the most critical and to provide NOAA with a prioritized list of regional HRPT stations to upgrade for the integrated POES/EPS real time network.
Action: M. Cazenave, B. Woodward by September 2003

37-6-S
NOAA to investigate and verify current plans for upgrading HRPT stations to receive METOP data.
Action: D. Robertson by September 2003.

37-7-C/S/I
NOAA, CNES and INPE to coordinate on bandwidth requirements for the INPE DCS.
Action: R. Bassett, C. Gal and W. Yamaguti by October 2003.

37-8-W/C
JTA and CNES/CLS to introduce new framework for Argos tariff determination and future evolution in completion of five-year plan.

- Initial proposal to JTA 23 (October 2003)
- Draft proposal to OPSCOM 38 (June 2004)
- Final approval by JTA 24 (October 2004)
- Implementation: January 2005

Action: D. Painting, M. Cazenave

37-9-C
CNES/CLS to provide quarterly reports of non-environmental use in the following categories: Homeland security, National Defense, law enforcement, humanitarian and episodic use.
Action: L. Mesnier by September 2003

37-10-S/C
NOAA and CNES/CLS to draft letter to Chilean VMS Authorities outlining the Argos System Use Policy and its impact on the current VMS situation.
Action: D. Benner and C. Gal by September 2003

37-11-S/C
CNES/CLS and NOAA will revise current SUA form to reflect changes in Argos Participating Agencies, SU Policy and Financial Liability.
Action: L. Mesnier and R. Bassett by September 2003

37-12-C/I
INPE to consult with CNES and the other Argos participating agencies about the mission requirements of their future DCS Transponder.
Action: C. Gal and W. Yamaguti by next OPSCOM (June 2004).

37-13-S
NOAA to document the structure and procedures of its electronic SUA review system and provide to the OPSCOM attendees.
Action: C. O'Connors by September 2003

37-14-C
CNES/CLS to document the procedures for the interim SUA review process to reflect the addition of NASDA as a Participating Agency and distribute to all OPSCOM attendees.
Action: L. Mesnier by July 2003

37-15-C
CNES/CLS to document access procedures to their SUA database and provide to NASDA.
Action: L. Mesnier by July 2003

37-16-S/C/N
NOAA to revise TOR to reflect changes in Argos OPSCOM membership and the implementation of streamlined SUA approval procedures.
Action: D. Benner, C. Gal, Y. Ishido by September 2003

37-17-C
CNES to provide NOAA with copies of METOP operations and procedures documentation to assist in developing the PMOIP
Action: C. Gal by September 2003

37-18-C/S
CNES/CLS and NOAA to draft and approve a Project Mission and Operations Implementation Plan for NOAA N' to reflect changes due to Argos-3 capabilities.
Action: C. Gal, L. Mesnier, R. Bassett and C. O'Connors by June 2004

37-19-C/S
CNES/CLS and NOAA to draft SUA renewal letter procedure and data denial procedure.
Action: L. Mesnier, C. O'Connors by July 2003

37-20-C/S
CNES/CLS and NOAA to review and verify application categories on Argos Agreements listing
Action: L. Mesnier, C. O'Connors by September 2003

Exhibit 1

List of attendees

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Exhibit 2

37th Argos Operations Committee Meeting Agenda

Auberge Cavalière, Les Saintes-Maries-de-la-Mer, France

Wednesday, June 11, 2003

09:00	A.	Opening	
		A-1. Welcoming Remarks	(CNES)
		A-2. Adoption of the Agenda	
		A-3. Selection of the Writing Group	
	B.	Status of Service Argos	(CLS)
	C.	Review of past action items	(ALL)
	D.	Review of spacecraft system performance	
		D-1. Status of spacecraft : NOAA-11 to NOAA-17	(NOAA)
		D-2. Status of ADEOS II	(NASDA)
		D-3. Status of Argos instruments on NOAA and ADEOS	(CNES)
10:30	Morning Break		
11:45	E.	Future systems	
		E-1. Spacecraft	
		E-1-1. NOAA N, N'	(NASA)
		E-1-2. NPOESS	(NOAA)
		E-1-3. METOP	(EUMETSAT)
		E-2. Argos instruments	
		E-2-1. Argos DCS/NOAA-N	(CNES)
		E-2-2. Argos DCS/METOP	(CNES)
		E-2-3. Argos DCS/NOAA-N'	(CNES)
		E-2-4. NPOESS	(NOAA/CNES)
		E-3. Progress report on future DCS requirements	(NOAA/CNES/NASDA)
		E-4. Brazilian DCS report	(INPE)

13:00		Lunch	
	F.	Review of ground processing systems	
		F-1. NESDIS Processing system	(NOAA)
		F-2. CNES Processing system	
		F-2-1. Operations report	(CLS)
		F-2-2. Argos Next ground segment	(NASDA/CLS)
		F-2-3. System use	(CLS)
		F-2-4. System improvement	(CLS/SAI)
		F-3. NASDA processing system	(NASDA)
		F-4. METOP DCS ground segment	(EUMETSAT)
15 :15		Afternoon Break	
15 :30		Writing Group convenes	
18:00-22:00		OPSCOM dinner	(CNES Host)

Thursday, June 12, 2003

09 :00	G.	Programs, admissions and promotion	
		G-1. Programs	
		G-1-1. Report on JTA Meeting	(WMO)
		G-1-2. Status of U.S. processing agreement	(NOAA)
		G-1-3. Status of current programs	(CLS)
		G-1-4. Status of non-environmental activity	(CLS)
		G-1-5. Financial status of Agent	(CLS)
10 :30		Morning Break	
10 :45		G-2. Promotion activity report	(CLS/SAI)
		G-3. System Use administration	(NOAA/CNES/NASDA)
		G-4. Argos SUA implementation	(NOAA/CNES/CLS)
		G-5. Argos II frequency policy update	(CNES/CLS)
12 :00		Lunch	

Friday, June 13, 2003

08:30	H.	Status of agreements	
		H-1. MOU's status	(ALL)
		H-2. OPSCOM working procedures	(NOAA/CNES/NASDA)
		H-3. Consolidated Report update	(NOAA/CNES/CLS)
		H-4. Argos Project Plans status	(ALL)
		H-5. Argos NPOESS Agreement	(NOAA/CNES/EUMETSAT)
10 :00		Morning Break	
10:15	Writing group convenes		
12:00	I.	Review and approve draft minutes	
	J.	Establish date and location of next meeting	

Taking into account the Opscom 2002 experience, Friday afternoon is kept as contingency as the above agenda may take longer than planned. Decision will be taken depending upon the progress of the previous days.